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ABSTRACT

The present invention enables efficient provision of hemodynamic benefits and therapy for patients suffering from intraventricular conduction delays or conduction blockage. The invention enables effectively measures against conduction delay or block (e.g., left bundle branch block or "LBBB") and enhances delivery of a novel form of left ventricle-only cardiac resynchronization therapy. According to the invention, a single LV fusion pacing stimulus is triggered from an atrial event (e.g., intrinsic or evoked depolarization). The triggering event can emanate from the right atrium (RA) or the left atrium (LA). The single LV fusion pacing stimulus is delivered prior to the intrinsic depolarization of the RV - upon expiration of a "LEPARS interval" - thus efficiently providing intraventricular electromechanical synchrony by fusion. During variations in heart rate the operating AV interval (herein A-LVp interval) is varied while the LEPARS interval substantially essentially constant, thereby preserving the enhanced hemodynamics resulting from the fusion depolarization.